

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>wes0331</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/KR2005/000925</b>	International filing date ( <i>day/month/year</i> ) <b>30 March 2005 (30.03.2005)</b>	Priority date ( <i>day/month/year</i> ) <b>02 April 2004 (02.04.2004)</b>
International Patent Classification (8th edition unless older edition indicated) <b>See relevant information in Form PCT/ISA/237</b>		
Applicant <b>SOLITONIX CO., LTD.</b>		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).
2. This REPORT consists of a total of 4 sheets, including this cover sheet.  
  
In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland  Facsimile No. +41 22 338 82 70	Date of issuance of this report <b>04 October 2006 (04.10.2006)</b>  Authorized officer  <div style="text-align: center; font-weight: bold;">Philippe Becamel</div>  e-mail: pt12@wipo.int
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## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

WON, Eun Sup

#501, Nambu BLDG., 827-20, Yeoksam-dong, Gangnam-gu  
Seoul 135-080 Republic of Korea

PCT

REC'D 04 JUL 2005

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WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 22 JUNE 2005 (22.06.2005)

Applicant's or agent's file reference  
wes0331

## FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/000925

International filing date (day/month/year)

30 MARCH 2005 (30.03.2005)

Priority date(day/month/year)

02 APRIL 2004 (02.04.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC7 H04B 1/40

Applicant

SOLITONIX CO., LTD. et al

## 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.  
For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office  
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Republic of Korea

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Authorized officer

JEONG, Jae Woo

Telephone No. 82-42-481-5718



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000925

**Box No. I Basis of this opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ in written format  
☐ in computer readable form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/KR2005/000925

**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1 - 13	YES
	Claims		NO
Inventive step (IS)	Claims	1 - 13	YES
	Claims		NO
Industrial applicability (IA)	Claims	1 - 13	YES
	Claims		NO

**2. Citations and explanations :**

D : US 6678381

The claimed inventions disclose a mobile communication terminal board, which comprises a baseband chip, an ultrasonic drive chip, and an ultrasonic speaker.

The closest citation D relates an ultra directional speaker, in which a plurality of electro-acoustic transducers transduce a frequency modulated ultrasonic signal into acoustic wave.

The subject matter of the claimed invention and D is commonly relates to a speaker using for ultrasonic signal. However, D disclose only an apparatus for transducing the ultrasonic signal into acoustic wave, while the claimed inventions disclose a mobile terminal including an ultrasonic speaker. Moreover, the mobile terminal including the ultrasonic speaker makes it possible to keep the mobile terminal apart from the user's head when making a call, which is not obvious to a person skilled in the art and is not suggested in the prior art. Therefore, the claimed inventions 1-13 are considered to fulfil the requirements of novelty under PCT Article 33(2) and inventive step under PCT Article 33(3).